

CLAIMS

1    1. In a system for multiplexing a plurality of input data streams and providing a multiplexed  
2    output data stream, each of the plurality of input data streams including a plurality of packets  
3    identified by packet identifiers, a method for dropping packets from at least one of the plurality of  
4    input data streams, comprising the steps of:

5                 receiving input defining a maximum data rate for each of the plurality of input data streams;

6                 determining the data rate associated with each of the plurality of input data streams;

7                 determining whether one of the plurality of input data streams is exceeding its maximum data

8                 rate;

9                 if one of the plurality of input data streams is exceeding its maximum data rate, dropping

10                packets from the multiplexed output data stream, the dropped packets corresponding to a

11                predetermined packet identifier associated with the input data stream that is exceeding its maximum

12                data rate.

1    2. The method of claim 1, wherein, subsequent to determining whether one of the plurality of  
2    data streams is exceeding its maximum data rate, the steps further comprise:

3                 reclassifying the predetermined packet identifier from normal priority to low priority within a  
4                 priority table.

1    3. The method of claim 2, wherein a packet is dropped only as long as the one of a plurality of  
2    input data streams is exceeding its maximum data rate, and further comprising the steps of:

3                 determining if any packets are being dropped; and

4                 if packets are not being dropped, and if a predetermined time has passed, changing any

5                 predetermined packet identifiers in low priority back to normal priority.

1    4. The method of claim 1, wherein the predetermined packet identifier is determined by:

2                 identifying a packet identifier corresponding to video packets within the plurality of packets

3                 associated with each of the plurality of input data streams.

- 1    5.     The method of claim 1, further comprising the steps of:
  - 2       determining when the one of the plurality of input data streams is no longer exceeding its
  - 3       maximum data rate; and
  - 4       transmitting all packets in the multiplexed data stream.
- 1    6.     The method of claim 1, further comprising the steps of:
  - 2       establishing a set cycling time for repeating the method steps and again determining whether
  - 3       one of the plurality of input data streams is exceeding its maximum data rate.
- 1    7.     The method of claim 1, wherein the plurality of input data streams are MPEG data streams.

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1        8. In a modulator for multiplexing a plurality of input data streams and providing a modulated  
2        output data stream, each of the plurality of input data streams including a plurality of packets  
3        identified by packet identifiers, a method for dropping packets from at least one of the plurality of  
4        input data streams, comprising the steps of:

5              receiving input defining a maximum data rate for each of the plurality of input data streams;

6              determining the data rate associated with each of the plurality of input data streams;

7              determining whether one of the plurality of input data streams is exceeding its maximum data

8        rate;

9              if one of the plurality of input data streams is exceeding its maximum data rate, dropping

10          packets from the multiplexed output data stream, wherein the dropped packets correspond to a

11          predetermined packet identifier associated with the data stream that is exceeding its maximum data

12        rate;

13              multiplexing the plurality of input data streams and providing a multiplexed output data

14          stream; and

15              modulating the multiplexed output data stream with a radio frequency (RF) signal for further

16          transmission.

1        9. The method of claim 8, wherein, subsequent to determining whether one of the plurality of  
2        input data streams is exceeding its maximum data rate, the steps further comprise:

3              moving the predetermined packet identifier from normal priority to low priority within a

4        priority table.

1        10. The method of claim 8, wherein the predetermined packet identifier is determined by:

2              identifying a packet identifier corresponding to video packets within the plurality of packets

3        associated with each of the plurality of input data streams.

1        11. The method of claim 8, further comprising the steps of:

2              determining if any packets are dropping;

3              if packets are not dropping, and if a predetermined time has passed, changing any

4        predetermined packet identifiers in low priority back to normal priority.

1    12.    A broadband delivery system for receiving and transmitting information signals, the  
2    broadband delivery system comprising:  
3                a receiver for receiving a plurality of input data streams;  
4                at least one modulator coupled to the receiver, the modulator comprising:  
5                        an input port for receiving the plurality of input data streams, each of the plurality of  
6    input data streams having a plurality of packets identified by packet identifiers;  
7                        a multiplexer coupled to the input port for providing a multiplexed output data  
8    stream;  
9                        at least one packet handler each coupled to the multiplexer, wherein each of the at  
10    least one packet handler receives and provides the multiplexed output data stream;  
11                        a processor coupled to the multiplexer and the at least one packet handler for  
12    receiving and providing information regarding the plurality of input data streams; and  
13                        a control system coupled to the processor,  
14                        wherein the processor receives input from the control system defining a maximum data rate  
15    for each of the plurality of input data streams, and wherein each of the at least one packet handler  
16    determines the data rate associated with each of the plurality of input data streams; and wherein the  
17    processor compares the data rate and the maximum data rate for each of the plurality of input data  
18    streams and determines whether one of the plurality of input data streams is exceeding its maximum  
19    data rate; and  
20                        wherein if one of the plurality of input data streams is exceeding its maximum data rate, drops  
21    packets from the multiplexed output data stream; wherein the dropped packets correspond to a  
22    predetermined packet identifier associated with one of the plurality of input data streams.

1 13. The broadband delivery system of claim 12, each of the least one packet handler further  
2 comprises:  
3 a priority table,  
4 wherein the predetermined packet identifier is initially at normal priority within the priority  
5 table, and wherein if one of the plurality of input data streams is exceeding its maximum data rate, the  
6 predetermined packet identifier is moved to low priority within the priority table.

1 14. The broadband delivery system of claim 13, wherein when the predetermined packet  
2 identifier is moved to low priority, packets associated with the predetermined packet identifier are not  
3 provided along with the multiplexed data stream.

1 15. The broadband delivery system of claim 12, wherein each of the at least one packet handler  
2 determines and flags a packet identifier corresponding to video packets within the plurality of packets  
3 associated with each of the plurality of input data streams, and wherein the packet identifier is the  
4 predetermined packet identifier.

1 16. The broadband delivery system of claim 12, wherein each of the at least one packet handler  
2 determines when the one of the plurality of input data streams is no longer exceeding its maximum  
3 data rate, wherein each of the at least one packet handler transmits all packets in the multiplexed data  
4 stream.

1 17. The broadband delivery system of claim 12, wherein each of the at least one packet handler is  
2 a field programmable gate array.

1 18. The broadband delivery system of claim 12, wherein each of the plurality of input data  
2 streams is an MPEG data stream.